REMARKS

Claims 3-4 and 7-10 were examined in the Office Action mailed November 22, 2006. The Applicants wish to express their appreciation for the allowance of claims 7-10.

As to the remaining claims, claim 3 stands rejected under 35 U.S.C. § 102(e) as anticipated by U.S. Patent 6,285,855 to Tsuji ("Tsuji"), and claim 4 stands rejected under 35 U.S.C. § 103(a) as unpatentable over Tsuji in view of the Pedrotti, *et al.* document "Introduction to Optics" at 135-39.

Claims 3-4 Are Patentable Over Tsuji and Pedrotti. The Applicant respectfully traverses the rejections based on Tsuji, on the grounds that this reference fails to disclose or suggest all the features of the present invention recited in claims 3-4 for which it is cited.

The Present Invention: Claim 3 recites, inter alia, an illumination device in which light from a light source is coupled in to a first end of an optical fiber bundle, and emerges from the second end of the optical fiber bundle via a coupling-out optical system. Between the coupling-out optical system and an illuminating optical system which illuminates an image field, a homogenizing optical system which is arranged between said coupling-out optical system and said illuminating optical system, wherein "said homogenizing optical system homogenizes a nonuniform intensity distribution in the image field of the light emerging from said optical fiber bundle," and "wherein homogenization occurs only in an intermediate image plane, and ...only by the homogenizing optical system." The Applicant has further amended claims 3-4 to make clear that no

fiber within the optical fiber bundle generates multiple images of the incoming light, *i.e.*, the optical fiber bundle is only used for propagating the light over a long distance, not for transforming the incident light into a larger or broader light pattern.

Tsuji: In contrast to the invention recited in claims 3-4, Tsuji discloses a fundamentally different approach to providing a uniform light distribution.

Tsuji teaches the use of an *optical pipe,* rather than a fiber bundle, to both transport light *and* to generate a multitude of images of a single light source over a broad area. *See, e.g.*, Tsuji Fig. 4 (image P_0 reflected multiple times in "light mixing means" or "inside reflection type integrator" 4 to generate multiple virtual images P_1 ... P_{10}); *id.* at 4:51; 5:3-28; 9:9-48 (describing the process by which reflections within the pipe generate multiple images); *id.* Fig. 5 (showing large multitude of point source images generated by optical pipe 4 visible at magnification unit ("zooming optical system") 5); *id.* at 9:44-48 ("Thus, at the light exit surface 4' of the inside reflection type integrator 4, a large number of light fluxes which seemingly appear as having been emitted from a large number of virtual images as superimposed on one anther, by which the illuminance distribution is made uniform."). Thus, Tsuji uses a reflection-generating optical pipe as a light source replicator, *thereby performing at least a partial initial homogenization of the incoming light by transforming the incident into the much more evenly-distributed, multi-faceted light pattern* visible at its magnification unit 5. This re-distributed (*i.e.*, partially-homogenized) light pattern is then further processed by a downstream "wavefront division type integrator" 7 to

obtain Tsuji's final homogenized light pattern.

Thus, unlike the present invention's approach of simply transporting light with a non-light-modifying fiber bundle to a single homogenization device (an arrangement which subsequently achieves a very high degree of uniformity over a markedly-broader area than previously unobtainable), Tsuji's approach is a multi-step homogenization process, which requires an optical pipe 4 to perform part of the required homogenization before this partially-homogenized light pattern is "finished" (made more uniform) by the final homogenization performed by integrator 7.

Because Tsuji does not disclose or suggest claims 3-4's "optical fiber bundle" in which "no fiber within said optical fiber bundle produces multiple images of the light introduced at the first end" (a feature which precludes the partial homogenization performed by Tsuji's optical pipe 4),[1] and further because Tsuji does not disclose or suggest a system in which "homogenization is performed only by the homogenizing optical system," claims 3-4 are patentable over this reference under § 102 and § 103.[2] Accordingly, reconsideration and

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[1] The Applicant notes that as a further grounds for distinguishing Tsuji, this reference fails to disclose or suggest the recited *optical fiber bundle*. Contrary to the assertion at page 3 of the pending Office Action, Tsuji does not disclose the use an optical fiber bundle – it discloses only the use of a single optical pipe. Tsuji at 9:11-14 ("the inside reflection type integrator 4 comprises *a glass rod of a hexagonal prism shape*"). Further, because Tsuji requires the use of an optical device which generates a broad distribution of *replicated* images to create a distributed light pattern for its integrator 7 to final process, it would not have been obvious to substitute a device which cannot generate such a pattern (i.e., an optical fiber bundle) in place of Tsuji's optical pipe.

[2] For its part, the Pedrotti document, cited for teaching the claimed entrance aperture greater than 0.60, fails to teach or suggest the features of claims 3-4 not taught by Tsuji. Pedrotti therefore fails to cure the deficiencies of Tsuji, and claims 3-4 are patentable over the combination of these references.

withdrawal of the pending rejections based on the Tsuji reference is respectfully requested.

CONCLUSION

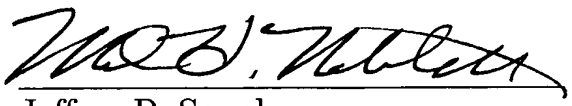
In view of the foregoing amendments and remarks, the Applicant submits that claims 3-4 are in condition for allowance. Early and favorable consideration, and issuance of a Notice of Allowance for Claims 3-4 and 7-10 is respectfully requested.

If there are any questions regarding this amendment or the application in general, a telephone call to the undersigned would be appreciated since this should expedite the prosecution of the application for all concerned.

If necessary to effect a timely response, this paper should be considered as a petition for an Extension of Time sufficient to effect a timely response, and please charge any deficiency in fees or credit any overpayments to Deposit Account No. 05-1323 (Docket #011270.49970D1).

Respectfully submitted,

April 20, 2006



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